a plurality of sensor inputs for receiving input regarding operating parameters of a compressor;

at least one control action output for sending a control action to said compressor; and

a control member communicated with said plurality of sensor inputs and said control action output, said control member being adapted to analyze input from said plurality of sensor inputs, to determine a control action based upon said input and to send said control action to said at least one control action output, wherein said control action includes actions for immediate protection, wherein a control action to shut down said compressor is issued, and control actions for prognostic protection, wherein a signal is issued while said compressor is continued to be operated.

4. (Amended) An apparatus for monitoring a compressor, comprising:

a plurality of sensor inputs for receiving input regarding operating parameters of a compressor;

at least one control action output for sending a control action to said compressor; and

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a control member communicated with said plurality of sensor inputs and said control action output, said control member being adapted to analyze input from said plurality of sensor inputs, to determine a control action based upon said input and to send said control action to said at least one control action output, wherein said control member is adapted to receive input comprising compressor discharge pressure, compressor discharge temperature, compressor suction pressure, compressor suction temperature, oil pressure and a compressor on/off input signal, wherein said control member includes a memory storing a plurality of potential control actions, a plurality of adjustable operating parameters and a plurality of sensor input value combinations corresponding to said plurality of potential control actions, and a processor adapted to compare said input to said sensor input value combinations and select said control action from said plurality of control actions, wherein said plurality of potential control actions includes a compressor shut down command, operation parameter adjusting commands and commands for indicating that maintenance is needed.

14.   (Amended)   An apparatus for monitoring a
compressor, comprising:

a plurality of sensor inputs for receiving input
regarding operating parameters of a compressor;

at least one control action output for sending a
control action to said compressor; and

a control member communicated with said plurality of
sensor inputs and said control action output, said control
member being adapted to analyze input from said plurality .
of sensor inputs, to determine a control action based upon
said input and to send said control action to said at least
one control action output, wherein said control member is
adapted to compare discharge temperature from said input to
a discharge temperature set point and to control a liquid
injection valve on said compressor based upon results of
the comparison, wherein said control member is adapted to
open said liquid injection valve when said discharge
temperature is greater than said set point.

17.   (Amended)   A method for monitoring a compressor,
comprising the steps of:

obtaining input regarding a plurality of compressor
operating parameters;

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feeding said input to a control member;

analyzing said input with said control member to determine a control action based upon said input; and

carrying out said control action on said compressor, wherein said control action includes actions for immediate protection, wherein a control action to shut down said compressor is issued, and control actions for prognostic protection, wherein a signal is issued while said compressor is continued to be operated.

20. (Amended) A method for monitoring a compressor, comprising the steps of:

obtaining input regarding a plurality of compressor operating parameters;

feeding said input to a control member;

analyzing said input with said control member to determine a control action based upon said input; and

carrying out said control action on said compressor, wherein said plurality of potential control actions include a compressor shut down command, operation parameter adjusting commands and commands for indicating that maintenance is needed, wherein said input comprises compressor discharge pressure, compressor discharge

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temperature, compressor suction pressure, compressor

suction temperature, oil pressure and a compressor on/off

input signal, wherein said control member includes a memory

storing a plurality of potential control actions and a

plurality of sensor input value combinations corresponding

to said plurality of potential control actions; and wherein

said control member selects said control action from said

plurality of potential control actions, wherein said

plurality of potential control actions include a compressor

shut down command, operation parameter adjusting commands

and commands for indicating that maintenance is needed.

24. (Amended) In combination, a compressor and
control module system, comprising:

a compressor; and

a control module comprising a plurality of sensor

inputs for receiving input from said compressor; at least

one control action output for conveying control actions to

said compressor; and a control member communicated with

said plurality of sensor inputs and said control action

output, said control member being adapted to analyze input

from said plurality of sensor inputs, to determine a

control action based upon said input and to send said

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control action to said at least one control action output,
wherein said control action includes actions for immediate
protection, wherein a control action to shut down said
compressor is issued, and control actions for prognostic
protection, wherein a signal is issued while said
compressor is continued to be operated.

29. (Amended) In combination, a compressor and
control module system, comprising:

a compressor; and

a control module comprising a plurality of sensor
inputs for receiving input from said compressor; at least
one control action output for conveying control actions to
said compressor; and a control member communicated with
said plurality of sensor inputs and said control action
output, said control member being adapted to analyze input
from said plurality of sensor inputs, to determine a
control action based upon said input and to send said
control action to said at least one control action output,
wherein said control member includes a memory storing a
plurality of potential control actions and a plurality of
sensor input combinations corresponding to said plurality
of potential control actions, wherein said plurality of

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potential control actions include a compressor shut down

command, operation parameter adjusting commands and

commands for indicating that maintenance is needed.